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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,359	12/29/1999	JEFF C. MORRISS	INTL-0294-US	2154

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EXAMINER

KJM, KEVIN

ART UNIT PAPER NUMBER

2634

DATE MAILED: 04/21/2004

22

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/474,359

Applicant(s)

MORRISS, JEFF C.

Examiner

Kevin Y Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01-29-2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 20-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-27 is/are allowed.
- 6) ☒ Claim(s) 28-30 is/are rejected.
- 7) ☒ Claim(s) 31-34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed on Feb. 2, 2004 with respect to claims 28-30 have been fully considered but they are not persuasive.

Claim 28, newly added, is a reinstatement of original claim 7, although a different language has been used. Specifically, the original claim 7 recited, in pertinent part, "a duty cycle of said at least one associated pulse train signal indicating a degree of skew between the associated data bit signal and the strobe signal" while the newly added claim 28 elaborates on the limitation by reciting "a duty cycle of said at least one associated pulse train signal increasing with one of an increase and a decrease in a degree of skew between the associated data bit signal and the strobe signal, and decreasing with the other of an increase and a decrease in the degree of skew." Simply put, both languages describe that the duty cycle is proportional to the degree of skew. To overcome the rejection of claim 7 was amended on September 26, 2003 (paper # 17).

Likewise, claim 29 is a reinstatement of amended claim 7, now cancelled.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al in view of Sharman et al (U.S. Patent No. 5,736,872) and Dabral (U.S. Patent No. 5,973,526).

Consider claims 28 and 29. Referring to Figs. 11 and 14, Tamura et al discloses a data receiver comprising data buffers (541 -543). Each buffer comprises "a first circuit" (5301)

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generating a skew-indicating signal between data and strobe and "a second circuit" (5302,5304) for latching data into the buffer. And yet Tamura et al is silent on the characteristics of the control signal indicating the skew between the data and clock signals. It simply shows a control signal from the phase comparator to the dotted box representing a delay chain circuit. In other words, the patent failed to expressly teach exactly how the output of the comparator controls the delay of the clock signal. Further, considering that all phase detectors produce an output signal proportional in magnitude or duty cycle, as established by Sharman et al at col.6, ll.25-28, and Tamura et al does not exclude either type, a phase detector producing a square wave signal whose duty cycle indicates the skew between the two inputs would have been one of two possible options. Furthermore, Debral teaches using the duty-cycle modulated signal to control variable delay circuit. See col.4, ll. 48-55 and Fig.5. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use a phase comparator that produces a pulse train whose duty cycle indicates the skew of two inputs, as taught by Dabral, as an actual implementation of the phase comparator of Tamura et al because such a phase comparator is one of two well known phase comparators as evidenced by Sharman.

Regarding claim 30, Fig. 14 shows a delay chain (5304) having taps indicating the strobe signal delays and a multiplexing circuitry, see the switches, selectively coupling the taps to the buffers (540).

***Allowable Subject Matter***

4. Claims 20-27,35-42 are allowed.

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5. Claims 31-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: No prior art has been found to teach regulating a timing relationship between a data bit signal and a second strobe signal based on the degree of skew which is proportional to the degree of skew between the data bit signal and a first strobe signal.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

kvk



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